Return on Investment Point of Service Computerized Provider Charge Entry

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Abstract. Provider charge entry systems offer many benefits to users and organizations. At Vanderbilt University Medical Center, a web-based provider charge entry system promises to deliver benefits in reducing days in accounts receivable, reducing labor required for claims and edit processing, and implementing business rules that deliver both strategic and financial benefits.

Introduction. Point of service Computerized Provider Charge Entry (CPCE) is part of an outpatient Computerized Provider Order Entry (CPOE) system developed at Vanderbilt that also facilitates associating diagnosis codes with charges using patient's electronic past medical history described elsewhere.[1] In evaluating the workflow for completing a clinic visit, we recognized how integral provider charging is to provider ordering. Both are done by the provider, require medical necessity (diagnosis coding), are processed at patient discharge by the same office staff, suffer from illegibility, missing data, and sometimes go missing altogether. There is no question that CPOE has benefits to an organization; however, the benefits are less direct and more challenging to extrapolate than are the benefits of CPCE. On the other hand, the benefits of CPCE are more direct and tangible. They are so frequently measured and quantified that the federal government promulgated electronic standards in the form of HIPAA to reduce those costs. For example, in a study of academic health care centers, 6.62% of total clinical revenue is consumed in backend billing processes.[2]

System Description.

The CPCE system is replacing a manual charging system, the forms for which were transferred almost verbatim into a computerized web page. Although the strategy was selected to speed the design and maintenance of the charge entry screens, it had synergistic benefits in decreasing end user training, transitioning to downtime processes, and blending seamlessly with the existing charge form approval process. The architecture of the CPCE uses J2EE technologies including java server pages and enterprise java beans, a web browser client, and an Oracle database.

Outcome. Based on data from a large Cardiology clinic with approximately 18,000 visits per year and 43 full and part-time providers, quantifiable savings occurred in reduced days in accounts receivable and reduced labor required for claims and edit processing. First, we reduced days in accounts receivable by decreasing our lag time between date of service and date of charge posting from 14.1 days in 2001 as compared to 9.8 days today. As a result, we were able to reduce our interest expense because we shortened the payment cycle. Second, we experienced a decrease in the number of missing encounters from 72 during the fourth quarter 2001 to 28 in the third quarter 2002 (39% decrease). Based on the decrease we experienced in the number of missing encounter forms, we project that we will be able to eliminate lost charges, as have other organizations. By eliminating the labor required to enter charges and retrieve missing encounter forms, we will be able to eliminate about 5 of the full time equivalents currently required to process these charges. In addition to the quantifiable savings, our system offers the strategic benefit of allowing us to better cope with an increasingly complex web of business rules for payor reimbursement. This decision to implement business rules in the system is based on expected revenue.

Discussion. This poster reviews some of the revenue and expense that can be recaptured with informatics. Longer payment cycles and increased days in accounts receivable are widespread in healthcare. Implementation of the CPCE can speed the collection of revenue and reduce the cost of the organization's backend billing processes. However, no system works without willing users. Providers may resist CPCE without appropriate incentives and planning. One advantage of CPCE is that coding is real time and performed by the provider who is most knowledgeable about the services that were delivered and the diagnoses of the patient. As healthcare organizations experience diminishing profit margins, it is important that informatics not overlook the obvious—there is revenue in charge capture and for clinics the key is facilitating the ability to collect the charge from the provider.

References

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[2] Woodcock EW, Williams AS, Browne RC, King G. Benchmarking the billing office. Healthc Financ Manage 2002; 56(9):42-46.